

REMARKS

1. Restriction Requirement and Status of Claims

In response to the Restriction Requirement dated September 28, 2000, the applicant elected with traverse the Group I set of claims (claims 1-24, 35-44) for purposes of proceeding with further examination on the merits. Thus, claims 25-34 were cancelled without prejudice to applicant's right to reassert such claims in this or a related application at a later date.

In a telephone conference on February 8, 2001 the undersigned spoke with the Examiner about the restriction requirement and agreed to elect the species of Figure 15a, pertaining to claims 1-24, 35, 38-43. This led to the agreed withdrawal of claims 36, 37 and 44.

Accordingly, claims 1-24, 35 and 38-44 remain under consideration.

2. Information Disclosure Statement

Although the Office Action included copies acknowledged by Examiner of applicant's forms PTO 1449 for two supplemental Information Disclosure Statements, mailed by applicant on October 4, 2000 and January 12, 2001, applicant's forms PTO 1449 mailed to the PTO on December 29, 1999 were not included. Applicant requests a copy of these forms PTO 1449 with Examiner's acknowledgment. For convenience, a duplicate copy of the Information Disclosure Statement mailed to the PTO on December 29, 1999 is enclosed.

Submitted with this amendment is a courtesy copy of a Supplemental Disclosure statement submitted on June 12, 2001, resulting from an International Search Report dated May 14, 2001, received in connection with a related PCT application. Comment on the references cited in the International Search Report appears below.

3. Rejections Under Section 112

The Office Action rejected claims 3, 8, 19, 35 and 38 under Section 112 for indefiniteness. Applicant respectfully submits that the present amendments made to those claims remedy the indefiniteness asserted. In particular, with respect to claims 35 and 38, it is submitted that the language describing a “connector that engages the connection formation” in the first and second walls clearly and definitely recites the structure shown at 5, 14 and 25 in applicant’s Figures 1-5.

4. Rejections Under Sections 102 and 103

The Office Action sets forth the following prior art rejections of various claims:

<u>Claims</u>	<u>Rejection(s)</u>
1-5, 10, 17, 21, 35, 40-41	§ 102(b) anticipated by Boeck
1, 2, 6, 8	§ 102(b) anticipated by Horobin
1, 2, 6, 9, 17, 35, 38-43	§ 102(b) anticipated by Stewart Jr.
8, 17-18, 21, 23, 24, 35	§ 102(b) anticipated by Jukes
11	§ 103(a) unpatentable over Boeck
1, 12-14, 19-20	§ 103(a) unpatentable over Stewart Jr. in view of Boeck
7	§ 103(a) unpatentable over Stewart Jr. in view of Smith
15, 16, 22	§ 103(a) unpatentable over Jukes

It is respectfully submitted that the teachings of the cited prior art taken individually or in the cited combinations are insufficient to support the above rejections, for the following respective reasons.

5. No Single Cited Prior Art Reference Anticipates Or Makes Obvious the Claims

The present invention involves a discrete composite block unit for independent placement with other adjacent units to form a wall structure. The block is formed from first and second walls, at least one of which is a masonry material. A connective structure formed of a non-masonry material is connected between first and second walls. The connective structure securely positions the first and second walls as opposite faces of a discrete rectangular solid. The connective structure of each block unit has at least two connectors, each of which is connected to one of the first and second walls, but each connective structure is free of connection to any wall of an adjacent block unit when the block unit is in a wall structure. The connective structure has arms that support the connectors and that provide a between-wall thermal conduction path with a limited vertical cross-sectional area relative to the area of either of the face areas of the first and second walls.

All of the cited references show structures different from applicants and all have serious teaching deficiencies as a basis for the rejections asserted against the claims to which they are applied. None teaches all the elements claimed by applicant.

Boeck – This patent teaches a form system for casting large panels. Foam panels 10, 12, 14, 16 which become the outside surfaces (non-vertical load-bearing) of the cast panels are interlocked with the aid of connectors 18, 20, 22, 24. The connectors have planar end members 30, 32, 34, 36 that overlap between vertically adjacent foam panels and provide a connection between such adjacent panels. There is no teaching of a discrete, preassembled, composite block unit with at least one masonry wall for independent placement as a unit with other laterally and vertically adjacent block units to form a wall structure.

Horobin – This patent also teaches a form system for casting large panels. Synthetic plastic panels 12, 14 are spaced apart by means of interlocking end walls or panels 16 and a plurality of strut members 18. The forms are a lightweight cellular plastic; thus the assembled forms do not include masonry outer walls. There is no teaching of a discrete, preassembled, composite block unit with at least one masonry wall for independent placement as a unit with other laterally and vertically adjacent block units to form a wall structure.

Stewart Jr. – This patent teaches a tile building wall made up of several connecting pieces. The side pieces 10 and the cross pieces 12, 15 are made of the same material, terra cotta and glazed tile being mentioned. Thus, the side pieces and cross pieces are all masonry. The pieces do not form discrete units, because the cross pieces, 12 and 22 used at the edges of side pieces 10 overlap and connect to laterally adjacent side pieces.

when two side pieces are laid end to end, as shown in Fig. 1, the adjacent ribs 11 of the side pieces will form a dovetail groove between them adapted to receive the dovetail heads or keys 13 which are formed on the cross pieces 12.

Stewart, Jr., p. 1, lines 40-45; see Figs 1, 6. With this construction, the tiles must be assembled from components in place in a wall structure, and there is no way to assemble a discrete block unit that is usable for independent placement. The Stewart, Jr. patent teaches no such block unit.

With respect to claim 38, the Office Action asserts that Stewart, Jr. “shows insulating mass (23) having approximately the same height and width dimensions as first and second walls.” However, any insulating mass in Stewart, Jr. is not “secured and held by the connective structure,” as with applicant. Moreover, although no reference number 23 could be found in Stewart, Jr.’s text, it is submitted that Stewart, Jr.’s description of Fig. 6 identifies the mass

labeled with reference number 23 as concrete (see Stewart, Jr., p. 2, lines 31-44), rather than insulation.

Jukes - This patent teaches a form system for casting a column or pilaster in a concrete wall. The form assembly is made up of a plurality of consumable wall forming modular blocks 12. Each block is made up of a pair of side plates 16 with a planar body portion 18 surrounded by peripheral edges made up of top and bottom flanges 20 and 22 and opposed end flanges 24. Each block is equipped with transverse tie members 30. Each tie member 30 includes a plate section that has a pair of end tabs or lugs 34 adapted to extend through slots. Concrete is poured within the form assembly. There is no teaching of a discrete, pre-assembled, composite block unit with at least one masonry wall for independent placement as a unit with other laterally and vertically adjacent block units to form a wall structure. Nor is there a teaching that the transverse tie members 30 can help achieve a limited thermal path between walls.

The Boeck reference is also cited as a basis for an obviousness rejection of claim 11. It is stated that Boeck teaches connectors made of plastic and that it would be obvious to modify Boeck. Because Boeck does not teach an independently-placed block unit but rather foam forms (non-vertical load-bearing) for casting panels, and by reason of the other differences stated above, the Boeck reference not only fails to anticipate claim 11 but also fails to make obvious that claim.

The Jukes reference is also cited as a basis for an obviousness rejection of claims, with reference to claims 15, 16 and 22. Like Boeck, because Jukes does not teach an independently-placed block unit but rather metal forms for poured concrete, and by reason of the other

differences stated above, the Jukes reference not only fails to anticipate claims 15, 16 and 22 but also fails to make obvious those claims.

In sum, no cited reference supports an anticipation or obviousness rejection of any independent claim in the case. Independent claims 1, 17 and 35 and, *a fortiori*, all pending claims dependent therefrom are allowable over the cited prior art, taken individually. In addition, dependent claim 39 is allowable based on the further distinctions with respect to its insulating mass, discussed above. Reconsideration of all rejections based on single cited references is respectfully requested.

6. The Cited Prior Art Combinations Do Not Support the Section 103 Rejections

In order for a combination of references to establish a case of *prima facie* obviousness, three requirements must be met:

1. some suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine the teachings;
2. a reasonable expectation of success; and
3. the prior art references when combined must teach or suggest all the claim limitations.

MPEP §2142.

The cited combinations of references do not establish a case of *prima facie* obviousness against independent claims 1, 17 and 35 as amended, because, among other reasons, the cited combinations do not disclose, or even suggest the combinations of elements recited in applicant's amended claims. The specific combinations cited are addressed below.

The claimed combination of Stewart Jr. and Boeck applied as the basis of an obviousness rejection of claim 1, 12-14, 19-20 is not proper, as there is no motivation stated in either reference for combining Stewart Jr.'s tile components (e.g., side pieces 10) with Boeck's quite different, non-vertical load-bearing, foam form panels. But more significantly, neither teaches a "discrete, preassembled, composite block unit for independent placement as a unit with other laterally and vertically adjacent units to form a wall structure" in which "the connective structure is free of connection to any wall of any laterally adjacent block unit when the block unit is in a wall structure." Only by using hindsight and picking and choosing pertinent features from each reference could any configuration even resembling applicant's invention be made.

With respect to claims 14, 19 and 20, it is respectfully submitted that it is not proper merely to assert that it would be obvious to modify Stewart, Jr. to make a connective structure as shown and claimed by applicant. Stewart, Jr. plainly has no such teaching; nor does Boeck have any such teaching or suggestion. Such a configuration is not taught by any prior art cited, although several show the concept of cross pieces. It is respectfully submitted that the assertion of obviousness is based solely on hindsight informed by applicant's disclosure. In the absence of specific prior art, the rejection of claims 14, 19 and 20 is not supportable.

The claimed combination of Stewart Jr. and Smith applied as the basis of an obviousness rejection of claim 7 also is not proper, as there is no motivation stated in either for combining Stewart Jr.'s multi-piece tile components with Smith's integral retaining wall blocks. Only by using hindsight and picking and choosing pertinent features from each could any configuration even resembling applicant's invention be made.. Moreover, claim 7, being dependent on claims

that are dependent on claim 1 has all the same distinguishing elements as claim 1 and is allowable for the reasons stated with reference to claim 1.

The differences in structure between applicant's claims and the prior art are significant and lead to important advantages over the prior art. Applicant's invention, being a discrete unit with a connective structure requiring no connection to adjacent block units permits construction to occur with conventional block-laying tradesmen, using conventional mortar techniques. But applicant's invention makes their job easier and their work more efficient, because each unit is lighter and easier to handle than a conventional concrete/masonry block of the same face area. There is no need for extra connection operations or for manipulation of applicant's connective structure to join to adjacent wall units. The connective structure is pre-assembled with the walls before the block is placed. The block can simply be placed and mortar joined to others.

Once the blocks are laid, further advantages appear. One advantage is that the thermal path between first and second walls is sharply limited through applicant's invention, improving R-value. A solid cast concrete wall transmits thermal energy relatively easily between its outer surfaces. A conventional concrete block does not have a continuous thermal path from side edge to side edge between its opposed walls, as its walls are connected only at the edges and any intermediate webs. But the concrete webs are still significant thermal paths, because they are wide and extend the full height between the top and bottom edges of the block. This means that a significant vertical cross-sectional area still exists on the thermal path between walls. That is, any vertical section taken between the walls in such a block includes significant areas of concrete webs, with resulting low R-values. In applicant's invention a very high R-value is attainable.

This is achieved by making the thermal paths narrow and also by using plastic or other non-masonry materials with more favorable R-values than masonry.

In some embodiments, the thermal paths are limited by tapering the connective structure as it extends away from the wall. Thus, the thermal path between walls grows more restricted as the vertical cross-sectional area of applicant's connective structure decreases.

If a center partition has been used in the connective structure, this partition permits placing a layer of concrete or a layer of insulation (or both) within the wall. Thus, additional strength or insulation value in desired amounts can be added easily, although for some applications neither will be necessary.

The connective structure also facilitates use of an insulating mass supported by the connective. If an insulating mass secured and held by the connective structure is used (claim 38) then no insulation filling need be added. Moreover, the insulating masses of adjacent block units together provide a partition that permits the remaining interior cavity of the wall to be filled with concrete, if needed for additional strength.

7. Prior Art Cited in Related PCT Application

As noted above, applicant became aware of certain new prior art in connection with a corresponding PCT application (see enclosed International Search Report dated May 14, 2001). Comments on each of these items follow:

Spakousky – This patent is the parent application to the present continuation in part application. The claims pending in the present application (except for claim 38), are all supported by the original, parent application disclosure (see e.g., Figs. 1-14), which has a priority date of February

4, 1997. Claim 38 adds the insulating mass secured and held on the connective structure, which is not taught by this reference. Thus, this reference can not anticipate or make obvious the present claims.

Beames – This patent teaches a wall construction made of panels 20 with concealed fasteners 11.

The concealed fasteners 11 overlap between the upper and lower courses of panels to prevent their separation. Thus, the reference does not teach a “discrete, preassembled, composite block unit for independent placement as a unit with other laterally and vertically adjacent units to form a wall structure.”

Potvin – This patent has a priority date of April 10, 1997. The claims pending in the present application (except for claim 38) are all supported by the original, parent application disclosure (see e.g., Fig. 1-14), which has a priority date of February 4, 1997. Claim 38 adds the insulating mass secured and held on the connective structure, which is not taught by this reference. Thus, this reference can not anticipate or make obvious the present claims.

Harter – This patent teaches blocks that are joined by ties that are partly embedded in the block pieces forming opposed walls. Thus, there is no teaching of relevance to the kinds of connector structures shown by applicant.

Wilson - This patent teaches blocks that are joined by reinforcing means 20, 30 or 50 that are partly embedded in the block pieces forming opposed walls. Thus, there is no teaching of relevance to the kinds of connector structures shown by applicant.

Moore - This patent has a priority date of January 16, 1998. The claims pending in the present application (except for claim 38) are all supported by the original, parent application disclosure (see e.g., Fig. 1-14), which has a priority date of February 4, 1997. Claim 38 adds the insulating

mass secured and held on the connective structure, which is not taught by this reference. Thus, this reference does not anticipate or make obvious the claims.

8. Conclusion

A request for extension of time to respond to the pending Office Action accompanies this Amendment.

In view of the above amendments and discussion, applicant respectfully submits that the application is in condition for allowance. A Notice of Allowance is respectfully requested.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendments. The attached pages are captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

Please replace the first paragraph on page 1, line 1 with the following rewritten paragraph:

This application is a continuation-in-part of U.S. Patent Application Serial Number 08/795,691 filed February 4, 1997, entitled "Building Block With [Interconnecting] Insulating Center Portion," which issued on November 16, 1999 as U.S. Patent No. 5,983,585.

In the claims:

Please amend the claims as follows:

1. (Amended) A discrete, preassembled, composite block unit for independent placement as a unit with other laterally and vertically adjacent units to form a wall structure, comprising:
a first wall and a second wall, at least one of which is load bearing for vertical loads and made from a first, masonry-type material;
a [lattice-like] connective structure formed of a second, non-masonry-type material [different from the first material] and connected between the first and second walls, said connective structure having at least two connectors[,];
wherein each of the connectors is connected to one of the first and second walls, such that prior to placement of the block unit in a wall structure the first and second walls are securely positioned with respect to one another as opposite faces of a discrete, substantially rectangular solid, each face having a face area;

wherein the connective structure is free of connection to any wall of any adjacent block unit when the block unit is in a wall structure; and

wherein the connective structure comprises arms supporting the at least two connectors and said arms provide a thermal conduction path of limited vertical cross-sectional area relative to either wall face area.

2. (Amended) The block unit of claim 1, wherein the connective structure comprises:

a center form with first and second opposed sides;
at least one of the arms supporting a connector [arm projecting] projects outwardly from each of the opposed sides of the center form; and
wherein [one of the connectors is attached to each end of the at least one arm] the arms taper such that the vertical cross-sectional area of the connective structure decreases as it extends away from the walls toward the center form.

3. (Amended) The block unit of claim 1, wherein at least one connector is [a] an insert-type connector and one of the first and second walls has a connector formation that is matingly engaged by the connector.

4. (Amended) The block unit of claim 3, wherein the connector formation is a receptacle and the insert-type connector is [compressed and] inserted into the receptacle, such that the insert-type connector is frictionally engaged by the receptacle.

5. (Amended) The block unit of claim [1] 3, wherein [each connector is one of a male-female connector pair and engages a corresponding female or male] the insert-type connector is supported on one of the arms and the arm tapers such that the vertical cross-sectional area of the connective structure decreases as it extends away from the connector formation.

6. (Amended) The block unit of claim [2] 1, wherein the connective structure comprises:

two end arms and a center arm;

wherein the center arm is vertically displaced [on the center form] with respect to the end arms.

7. (Amended) The block unit of claim 6, wherein the center arm comprises at least one recess for [receiving] accommodating a horizontal reinforcing bar.

8. (Amended) The block unit of claim 6, wherein the connective structure further comprises a [reinforcing arm connected to at least one of] center form supported on the [other] two end arms and center arm.

14. (Amended) The block unit of claim 1, wherein at least one connector [is a compressible V-shaped connector] has sides extending outwardly and is received in a dovetail-shaped connector formation in the first or second wall.

Please cancel claim 16.

17. (Amended) A connective structure for forming a discrete, preassembled, composite block unit for independent placement as a unit with other laterally and vertically adjacent units to form a wall structure, each block unit having a first wall and a second wall, each with a face area and at least one of which is load-bearing for vertical loads, comprising:

a plurality of elements forming arms and [a lattice;] connectors [formed in the lattice] for connecting the connective structure between [a] the first wall and [a] the second wall; [and]

[handle means for grasping and manipulating the block unit after joining with the first wall and second wall, said handle means being located in a generally balanced position relative to the preassembled, composite block unit]

wherein the connective structure is free of connection to any wall of any adjacent block unit when the block unit is in a wall structure; and

wherein the connective structure comprises at least one arm extending between the first and second walls and supporting at its opposed ends connectors and said arm provides a thermal conduction path of limited vertical cross-sectional area relative to either face area.

18. (Amended) The connective structure of claim 17, wherein the [lattice] elements

comprise:

a center form;

two end arms projecting outwardly from each side of the center form and substantially perpendicularly from the center form, wherein both ends of each end arm have a connector;

a center arm projecting outwardly from each side of the center form and substantially perpendicularly from the center form, wherein both ends of the center arm have a connector; and

wherein the connective structure is integrally formed of a substantially rigid material.

19. (Amended) The connective structure of claim 17, wherein at least one of the connectors is an [compressible] insert-type connector for a dovetail-shaped connector formation in the first or second wall.

20. (Amended) The connective structure of claim 19, wherein the [compressible] insert-type connector is generally V-shaped.

21. (Amended) The connective structure of claim 17, wherein the connectors for connecting the connective structure between a first wall and a second wall [comprises] comprise at least one connector for connection to each of the first and second walls.

Please cancel claims 22 and 23.

24. (Amended) The connective structure of claim [18 further comprising at least one reinforcing arm connected between the center form and an arm] 17 wherein the arms supporting the at least two connectors taper such that the vertical cross-sectional area of the connective structure decreases as it extends away from the connectors.

35. (Amended) A discrete block unit for independent placement as a unit with other laterally and vertically adjacent units to form a wall structure comprising:

a first wall and a second wall, at least one of which is made from a masonry material and capable of vertical load bearing and each of which has a connector formation and a vertical face area; [and]

a [lattice-like] connective structure of non-masonry material positioned and connected between the [outer and inner] first and second walls, said connective structure having at least one connector [for engaging] that engages the connector formation at the first wall and at least one connector [for engaging] that engages the connector formation at the second wall;

wherein the connective structure is free of connection to any wall of any adjacent block unit when the block unit is in a wall structure; and

wherein the connective structure comprises arms supporting at least two connectors and
said arms provide a thermal conduction path of limited vertical cross-sectional area relative to
either wall face area.

38. (Amended) A discrete block unit as claimed in claim 35 further comprising an insulating mass having approximately the same height and width dimensions as the first and second walls, said mass being [formed for insertion in engagement with] secured and held by the connective structure so as to provide a barrier to energy movement between the first and second walls.

Please cancel claim 39.

41. (Amended) A discrete block unit as claimed in claim 35 wherein at least one of the first and second walls is [integrally formed] unitary with the connective structure.

Please cancel claims 42 and 43.